

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number
WO 2004/066360 A3

(51) International Patent Classification⁷: C23C 14/34,
H01F 7/06, 27/06

(21) International Application Number:
PCT/US2004/001798

(22) International Filing Date: 21 January 2004 (21.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/441,999 22 January 2003 (22.01.2003) US

(71) Applicant (for all designated States except US): HONEY-
WELL INTERNATIONAL INC [US/US]; 101 Columbia
Road, Morristown, NJ 07962 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MIZE, John

[US/US]; 13518 East Redlin Drive, Spokane, WA 99216
(US). NIEMELA, Kenneth [US/US]; 30019 North Perry
Road, Deer Park, WA 99006 (US). WU, Steven [US/US];
14825 E. Bella Vista Drive, Veradale, WA 99037 (US).

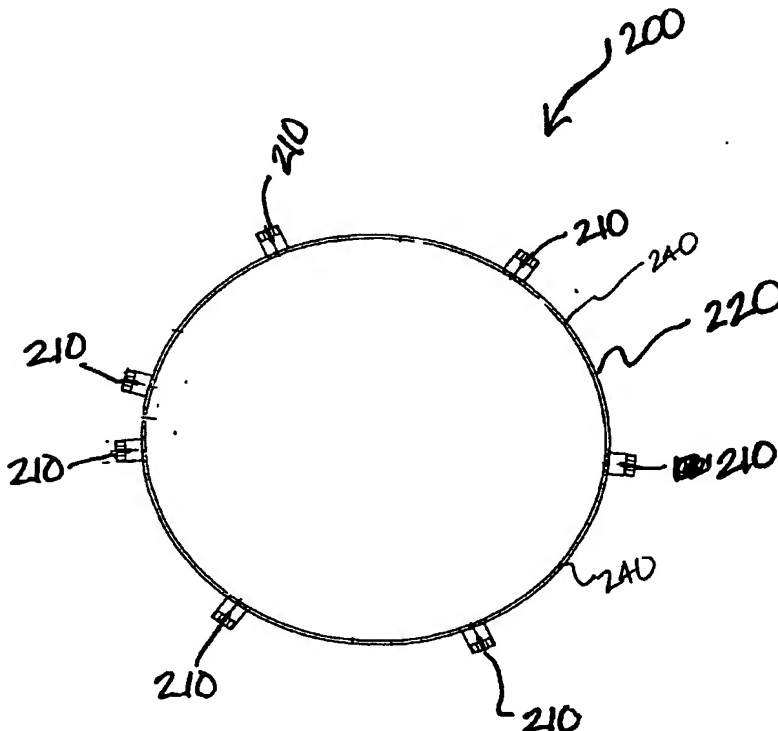
(74) Agent: THOMPSON, Sandra; Bingham McCutchen
LLP, Three Embarcadero Center, San Francisco, CA
94111-4067 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, DM, DZ, EC, EG, ES, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: APPARATUS AND METHODS FOR IONIZED DEPOSITION OF A FILM OR THIN LAYER



(57) Abstract: A coil assembly (200) is described herein that comprises a) at least one coil (220) with a width (240); and b) at least one boss (210) coupled to the at least one coil, wherein the at least one boss comprises at least two support sections. Methods of forming and/or producing coil assemblies are described herein and comprise a) providing a coil; b) providing at least one boss having at least two support sections; and c) coupling the at least one boss to the coil.

WO 2004/066360 A3



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
29 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/01798

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C23C 14/34; H01F 7/06, 27/06

US CL : 204/298.06; 29/606; 336/65

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 204/298.06; 29/606; 336/65

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0144901 A1 (NULMAN et al) 10 October 2002 (10.10.2002); [0010]	4 and 23
X	US 2002/0047116 A1 (PAVATE et al) 25 April 2002 (25.04.2002); Figure 1B	1-3, 5-7, 10-17, 20-22, 24-26, and 29-36
Y		4, 8, 9, 18, 19, 23, 27, 28, 37, and 38
Y	US 2001/0019016 A1 (SUBRAMANI et al) 06 September 2001 (06.09.2001); [0051]	18, 19, 37, and 38
Y	US 2001/0007302 A1 (HONG) 12 July 2001 (12.07.2001); [0023]	8, 9, 27, and 28



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:		"I"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

24 August 2004 (24.08.2004)

Date of mailing of the international search report

26 OCT 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Steven H VerSteege

Telephone No. (571) 272-1300